UNITED STATES PATENT AND TRADEMARK OFFICE

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ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 03/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 07-01)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>11 January 2000</u> .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-20</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-20</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>11 January 2000</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)	4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) ☐ Notice of Informal Patent Application (PTO-152)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) ☐ Other: _____ .

DETAILED ACTION

1.   Claims 1-20 have been examined and claims 1-20 have been rejected.

Drawings

2.   The drawings are objected to for the following reasons. A proposed drawing correction

or corrected drawings are required in reply to the Office action to avoid abandonment of the

application. The objection to the drawings will not be held in abeyance.

2-1.   The Draftsperson has objected to the drawings; see the copy of Form PTO 948 for an

explanation.

2-2.   The drawing of Fig. 2 is objected to under 37 CFR 1.83(a) because it fails to show the

direct relationship between the initialization program and the technology file as described in the

specification (lines 1-3, page 15). Any structural detail that is essential for a proper

understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d).

Specification

3.   The disclosure is objected to because of the following informalities:

Appropriate correction is required.

3-1.   It appears that "an initialization program 214", as described in lines 1-2 of page 15,

should be "an initialization program 210".

3-2.   It appears that "the global design rule definition file 202", as described in line28 of page

17, should be "the global design rule definition file 200".

4.   The Examiner requests detailed information and Manuals of OPUS CADENCE referred

to in the specification because it appears to be reasonably necessary to the examination of this

application and cannot be found.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

6.   Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as containing subject

matter which was not described in the specification in such a way as to enable one skilled in the

art to which it pertains, or with which it is most nearly connected, to make and/or use the

invention.

For example, as described in lines 22-23 of page 17, "Other native CAD tools 208

reference the global variables within file 200 through technology file 202", however, in lines 12-

16 of page 18, "If a CAD tool is native, ... the CAD tool accesses the values of the global

variables in file 200 directly, ... without further need for translation or compilation of a

technology file 202". Therefore, it is unclear for one skilled in the art how the native CAD tool

may reference the global variables within file 200.

7.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the
> subject matter which the applicant regards as his invention.

8.   Claims 10, 13, and 17-18 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

8-1.   Claim 10 recites the limitation "The system of claim 5" in line 1 of the claim. There is

insufficient antecedent basis for this limitation in the claim. For the purpose of claim

examination, the Examiner will presume that "The system of claim 5" as described in line 1

refers to "The system of claim 8".

8-2.   Claim 13 recites the limitation "The system of claim 1" in line 1 of the claim. There is

insufficient antecedent basis for this limitation in the claim. For the purpose of claim

examination, the Examiner will presume that "The system of claim 1" as described in line 1

refers to "The system of claim 8".

8-3.   Claim 17 is a dependent claim of claim 1. However, the limitation is the same as claim 2.

For the purpose of claim examination, the Examiner will presume that claim 17 is a dependent

claim of claim 16.

8-4.   Claim 18 recites the limitation "global design rule definition file" in lines 4-5 and 7 of the

claim. However, in the specification (lines 18-19 of page 5), it refers to "technology file". For

the purpose of claim examination, the Examiner will presume the "global design rule definition

file" as described in the claim refers to the "technology file".

Claim Rejections - 35 USC § 102

9.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Rubin, U.S.

Patent 5,050,091 issued September 17, 1991.

10-1. Regarding claim 1, Rubin discloses that in a computer-aided design environment, a

method for ensuring consistency of design rule application among a plurality of CAD tool

programs, each design rule defining a design characteristic (electrical design system, column 2,

line 46 through column 4, line 56), the method comprising:

(a) creating a global design rule definition file including at least one global variable

having a design rule characteristic assigned thereto (attribute of prototype objects, column 15,

lines 45-56);

(b) providing a technology file containing a reference to the global variable (attribute of

instance objects, column 15, lines 50-63);

(c) initializing one of the CAD tool programs which utilizes the global variable with the

technology file reference to the global variable (initialization call, column 13, lines 31-40); and

(d) conforming the CAD tool program to modifications in the design rule (reflect the

change made, column 13, lines 5-23).

10-2. Regarding claim 2, Rubin further discloses that (d) comprises:

(d.1) redefining the value of the global variable in the global design rule definition file in

accordance with modifications to the design rule (change the technology, column 13, lines 41-

50).

10-3. Regarding claim 3, Rubin discloses that (d) further comprises:

(d.2) determining whether any modifications have occurred to the design rule (wait for a command, column 13, lines 36-40).

10-4. Regarding claim 4, Rubin further discloses the CAD tool program and the global design rule definition file are written in the same language (C programming language, column 2, lines 54-57).

10-5. Regarding claim 5, Rubin further discloses the CAD tool program (verification routine are written in prolog programming language, column 9, lines 18-24) and the global design rule definition file (C programming language, column 2, lines 54-57) are not written in the same language.

10-6. Regarding claim 6, Rubin further discloses the global design rule definition file is in a text format (attributes, column 15, lines 20-25) and wherein (c) further comprises:

(c.1) translating the global variable into the language of the CAD tool program (verification routine are written in prolog programming language, column 9, lines 18-24).

10-7. Regarding claim 7, Rubin discloses (a) further comprises:

(a.1) creating a global design rule definition file comprising a plurality of global variables, each global variable having a design rule characteristic assigned thereto (attributes of prototype objects, column 15, lines 20-56).

10-8. Regarding claim 8, Rubin discloses that in a computer-aided design system having at least one memory and adhering to a plurality of design rules, each design rule defining a design characteristic, a system for ensuring consistency of design rule application among a plurality of CAD tool programs (electrical design system, column 2, line 46 through column 4, line 56), the system having a memory (main memory 606, FIG. 6) and comprising:

A. a global design rule definition file stored in the memory and including at least one

global variable having a design rule characteristic assigned thereto (attribute of prototype

objects, column 15, lines 45-56);

B. a technology file stored in the memory and containing a reference to the global

variable (attribute of instance objects, column 15, lines 50-63);

C. at least one CAD tool program stored in the memory and which utilizes the global

variable (design rule checker 70, FIG._1); and

D. means for ensuring that the CAD tool program utilizes the current design rule changes

(reflect the change made, column 13, lines 5-23).

10-9. Regarding claim 9, Rubin further discloses the means for ensuring comprises:

means for initializing the CAD tool program which utilizes the global variable with the

technology file reference to the global variable (initialization call, column 13, lines 31-40).

10-10. Regarding claim 10, Rubin further discloses the CAD tool program and the global design

rule definition file are written in the same language (C programming language, column 2, lines

54-57).

10-11. Regarding claim 11, Rubin further discloses the CAD tool program (verification routine

are written in prolog programming language, column 9, lines 18-24) and the global design rule

definition file (C programming language, column 2, lines 54-57) are not written in the same

language.

10-12. Regarding claim 12, Rubin further discloses the global design rule definition file is in a

text format and the system further comprises program code configured to translate the global

variable into the language of the CAD tool program (verification routine are written in prolog programming language, column 9, lines 18-24).

10-13. Regarding claim 13, Rubin further discloses the global design rule definition file comprises a plurality of global variables, each global variable having a design rule characteristic assigned thereto (attributes of prototype objects, column 15, lines 20-56).

10-14. Regarding claim 14, Rubin discloses a computer program product for use with a computer system, the computer system capable of executing computer-aided design programs, the computer program product comprising a computer usable medium having program code embodied in the medium, the program code comprising:

(a) program code for defining in a global design rule definition file at least one global variable having a design rule characteristic assigned thereto (attribute of prototype objects, column 15, lines 45-56);

(b) program code defining a technology file containing a reference to the global variable(attribute of instance objects, column 15, lines 50-63);

(c) program code for initializing one of the CAD tool programs which utilizes the global variable with the technology file reference to the global variable (initialization call, column 13, lines 31-40); and

(d) program code for redefining the value of the global variable in the CAD tool program in accordance with modifications to the design rule characteristic assigned to the global variable in the global design rule definition file (change the technology, column 13, lines 41-50).

10-15. Regarding claim 15, Rubin discloses a computer program product for use with a computer system, the computer system capable of executing computer-aided design programs,

the computer program product comprising a computer usable medium having program code

embodied in the medium, the program code comprising:

A. program code for performing a computer-aided design function (place a transistor,

column 14, lines 2-18) with a value of a global variable representing a design rule characteristic

(attribute of prototype objects, column 15, lines 45-56);

B. program code for referencing the value of the global variable in a technology file (call

upon the technology information block, column 14, lines 15-18); and

C. program code for utilizing the value of the global variable received from the

technology file to perform the computer-aided design function (acquire the appropriate

information, column 14, lines 15-18).

10-16. Regarding claim 16, Rubin discloses that in a computer-aided design system having a

memory (main memory 606, FIG. 6), a method for ensuring consistency of design rule

application among a plurality of CAD tool programs, each design rule defining a design

characteristic (electrical design system, column 2, line 46 through column 4, line 56), the method

comprising:

(a) creating a global design rule definition file in the memory, the global design rule

definition file including at least one global variable having a design rule characteristic assigned

thereto (attribute of prototype objects, column 15, lines 45-56);

(b) providing at least one program statements within one of the CAD tool programs

(design rule checker 70, FIG._1) which references a global variable within the global design rule

definition file (attribute of instance objects, column 15, lines 50-63); and

(c) conforming the CAD tool program to modifications in the design rule characteristic

(reflect the change made, column 13, lines 5-23).

10-17. Regarding claim 17, Rubin further discloses that (c) comprises:

(c.1) redefining the value of the global variable in the global design rule definition file in

accordance with modifications to the design rule characteristic (change the technology, column

13, lines 41-50).

10-18. Regarding claim 18, this computer data signal claim includes same computer program

product limitations as in claim 15 and is anticipated using the same analysis of claim 15.

10-19. Regarding claim 19, Rubin further discloses the global design rule definition file

comprises a plurality of global variables, each global variable having a design rule characteristic

assigned thereto (attributes of prototype objects, column 15, lines 20-56).

10-20. Regarding claim 20, Rubin further discloses the global design rule definition file

comprises a plurality of global variables, each global variable having a design rule characteristic

assigned thereto (attributes of prototype objects, column 15, lines 20-56).

Conclusion

11.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Reference to Smith et al., U.S. Patent 5,548,698 issued August 20, 1996, is cited as

disclosing a rule-based parametric design apparatus and method.

Reference to Sebastian, U.S. Patent 5,552,995 issued September 3, 1996, is cited as

disclosing a computer-based engineering design system.

Reference to Majors, U.S. Patent 5,581,475 issued December 3, 1996, is cited as

disclosing an interactive electromigration rule-based topography layout adjustment methodology.

Reference to Fujimoto, U.S. Patent 5,681,674 issued October 28, 1997, is cited as

disclosing design rule confirmation method.

Reference to Dangelo et al., U.S. Patent 6,216,252 issued April 10, 2001, and filed

August 22, 1996, is cited as disclosing a method for creating, validating, and scaling structural
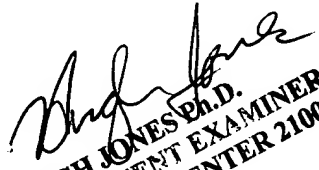
description of electronic device.

Reference to Barnes, "SKILL: A CAD System Extension Language", Conference

Proceedings on 27th ACM/IEEE Design Automation Conference, 1990, pages 266-271, is cited

as introducing the SKILL programming language.

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Herng-der Day whose telephone number is (703) 305-5269. The

examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kevin J Teska can be reached on (703) 305-9704. The fax phone numbers for the

organization where this application or proceeding is assigned are (703) 746-7239 for regular

communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703) 305-3900.

Herng-der Day
March 18, 2003

HUGH JONES Ph.D.
PRIMARY PATENT EXAMINER
TECHNOLOGY CENTER 2100